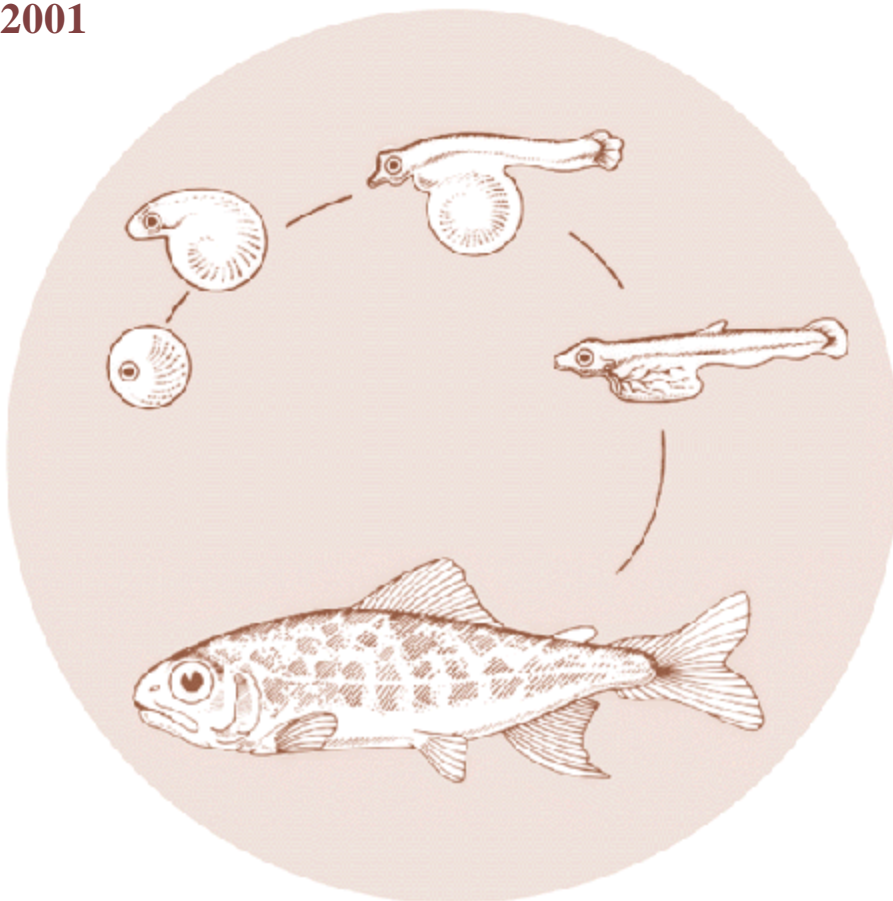


Sherman Creek Hatchery

Washington Department of Fish and Wildlife Fish Program

Annual Report 2001



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**WASHINGTON DEPARTMENT
OF
FISH AND WILDLIFE
FISH PROGRAM
HATCHERIES DIVISION**

SHERMAN CREEK HATCHERY

ANNUAL REPORT

January 1, 2001 - December 31, 2001

Project No. 91-047-00 and No. 2000-0-0018

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EXECUTIVE SUMMARY

Sherman Creek Hatchery's primary objective is the restoration and enhancement of the recreational and subsistence fishery in Lake Roosevelt and Banks Lake. The Sherman Creek Hatchery (SCH) was designed to rear 1.7 million kokanee fry for acclimation and imprinting during the spring and early summer. Additionally, it was designed to trap all available returning adult kokanee during the fall for broodstock operations and evaluations. Since the start of this program, the operations on Lake Roosevelt have been modified to better achieve program goals.

The Washington Department of Fish and Wildlife, Spokane Tribe of Indians and the Colville Confederated Tribe form the interagency Lake Roosevelt Hatcheries Coordination Team (LRHCT) which sets goals and objectives for both Sherman Creek and the Spokane Tribal Hatchery and serves to coordinate enhancement efforts on Lake Roosevelt and Banks Lake. The primary changes have been to replace the kokanee fingerling program with a yearling (post smolt) program of up to 1,000,000 fish. To construct and operate twenty net pens to handle the increased production. The second significant change was to rear up to 300,000 rainbow trout fingerling at SCH from July through October, for stocking into the volunteer net pens. This enables the Spokane Tribal Hatchery (STH) to rear additional kokanee to further the enhancement efforts on Lake Roosevelt.

Current objectives include increased use of native/indigenous stocks where available for propagation into Upper Columbia River Basin Waters.

Monitoring and evaluation is preformed by the Lake Roosevelt Fisheries Monitoring Program. From 1988 to 1998, the principle sport fishery on Lake Roosevelt has shifted from walleye to include rainbow trout and kokanee salmon (Underwood et al. 1997, Tilson and Scholz 1997). The angler use, harvest rates for rainbow and kokanee and the economic value of the fishery has increased substantially during this 10-year period. The most recent information from the monitoring program also suggests that the hatchery and net pen rearing programs have been beneficial to enhancing the Lake Roosevelt fishery while not negatively impacting wild and native stocks within the lake.

The 2001 fishing season has been especially successful with great fishing for both rainbow and kokanee throughout Lake Roosevelt. The results of the Two Rivers Fishing Derby identified 100 percent of the rainbow and 47 percent of the kokanee caught were of hatchery origin.

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INTRODUCTION



Figure 1. Sherman Creek Hatchery

Sherman Creek Hatchery is at the mouth of Sherman Creek on Lake Roosevelt, which is 3 miles west of Kettle Falls, Washington. The Bonneville Power Administration (BPA) constructed the hatchery in 1991. The Washington Department of Fish and Wildlife (WDFW) perform the operations and maintenance with funding provided by BPA. The hatchery is one of two kokanee (*Oncorhynchus nerka*) facilities provided to partially mitigate for the loss of anadromous fish habitat due to the construction of Grand Coulee Dam in 1941. The hatcheries were initiated in part by the Northwest Power Planning Council's Columbia River Basin Fish and Wildlife Program. The BPA, Spokane Indian Tribe (ST), Colville Confederated Tribes (CCT), Upper Columbia United Tribes Fisheries Research Center (UCUT), Eastern Washington University (EWU), National Park Service (NPS) and the WDFW work together toward fishery enhancement on Lake Roosevelt and Banks Lake. The combined production goals of the Sherman Creek Hatchery (SCH) and the Spokane Tribal Hatchery (STH) were established at 13 million kokanee, (8 million for Lake Roosevelt and another 5 million for Banks Lake). In addition to the kokanee, 500,000 rainbow trout (*Oncorhynchus mykiss*) are supplied annually for net pen rearing through the Volunteer Rainbow Trout Net Pen Project. Fish feed is partially funded through the WDFW Aquatic Lands Enhancement Fund.

The role of the Sherman Creek Hatchery in this program is to: (a) establish a kokanee broodstock for future egg requirements; (b) create and enhance the kokanee fishery within Lake Roosevelt; and (c) assist in rainbow trout rearing and fishery enhancement on Lake Roosevelt.

2001 ANNUAL OPERATING PLAN

2001 ANNUAL PRODUCTION GOAL (APG)

The APG are the goals set fourth for the operation of SCH during the coming year. The Lake Roosevelt Hatchery Coordination Team(LRHCT) reviews these goals and they are then used to define objectives and provide direction for the program at Sherman Creek.

| Table 1. 2001 APG summary and time line for operations. | | | | | | | | | | | | | | | | | |
|--|------|-----------|----------|---------|--|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit | Fish | Operation | Number | In | Out | J | F | M | A | M | J | J | A | S | O | N | D |
| RW's | KO | Rearing | 300 K | 25 / lb | 10 / lb | | | I | X | X | O | | | | | | |
| RW's | RB | Rearing | 300 K | 90 / lb | 15 / lb | | | | | | | I | X | X | X | O | |
| RW's | KO | Trapping | Unk | | | | | | | | | | | X | X | X | X |
| KNP-1 | KO | Rearing | 300 K | 40 / lb | 15 / lb | X | X | X | X | X | O | | | | | I | X |
| KNP-2 | KO | Rearing | 200 K | 40 / lb | 15 / lb | X | X | X | X | X | O | | | | | I | X |
| KFNP | RB | Rearing | 115 K | 15 / lb | 5 / lb | X | X | X | X | X | O | | | | I | X | X |
| KFNP | RB | Rearing | 30 K | 15 / lb | 9 / lb | | | I | X | X | O | | | | | | |
| KFNP | RB | Rearing | 60 K | 75 / lb | 10 / lb | | | | | | | I | X | X | O | | |
| CFH | RB | Rearing | 30 K | Eggs | 15 / lb | X | X | O | | | I | X | X | X | X | X | X |
| CFH | KO | Spawn | Adults | Unk | Fry | | | | | | | | | | X | X | X |
| CFH | KO | Eggs | Incubate | Unk | Fry | X | O | | | | | | | | | I | X |
| Key: RW's = Raceways KNP#1 = Kokanee Net Pens # 1 KNP#2 = Kokanee Net Pens # 2 KFNP = Kettle Falls Net Pens CFH = Colville Trout Hatchery | | | | | KO = Kokanee RB = Rainbow K = (x 1,000) Size = per / lb. Ukn = Unknown | | | | | I = Received In O = Transferred or Planted Out | | | | | | | |
| Note: These production numbers are included as a portion of this budget. The fish are reared during this budget cycle but some are programmed for release during the next budget cycle. | | | | | | | | | | | | | | | | | |

All production numbers, including numbers of fish to be released and sizes at release are target goals. Actual size and release numbers may be different from these goals. The APG and methods of operation are based on anticipated events at Sherman Creek, Lake Whatcom, Meadow Creek and the Spokane Tribal hatcheries. In the event significant circumstances or operations change, those changes will be reported to the LRHCT and BPA.

2001 ANNUAL OPERATION PLAN (AOP) GOALS

The operation and program goals from the 2001 AOP were as follows:

- 2.1 Continue with annual kokanee yearling production.
Status: Completed
- 2.2 Acclimate and plant 300,000 kokanee yearlings (Mar-July, raceways).
Status: Completed
- 2.3 Rear and release 500,000 kokanee yearlings, (Oct-June, net pens).
Status: Completed
- 2.4 Rear 300,000 rainbow trout fingerlings for supply to the Lake Roosevelt net pen sites, (July-Oct.). Status: Completed
- 2.5 Continue later release dates of all fish reared for improved survival.
Status: Completed
- 2.6 Continue using semi-moist / high energy feed during low water temperature periods.
Status: Completed
- 2.7 Construct and operate twenty kokanee net pens on Lake Roosevelt.
Status: Completed
- 2.8 Use all available means of adult kokanee collection for broodstock and program evaluation. These methods include: floating "Oneida" traps, gillnets and electro-fishing.
Status: Completed
- 2.9 Seek alternate means of adult collection.
Status: Ongoing
- 2.10 Assist with the cooperative rainbow trout net pen operations on Lake Roosevelt.
Status: Completed

2001 ANNUAL OPERATING PLAN OBJECTIVES

The objectives for this contractual period were to rear, acclimate, imprint, out plant, trap and spawn kokanee salmon and rear and acclimate rainbow trout to meet the 2001 APG and plan for 2002 operations. The purpose of this program is to enhance the fishery within Lake Roosevelt and to create a return of adult kokanee to Sherman Creek for future broodstock acquisition. We will try to accomplish this by following standard operating procedures of the Fish Program, WDFW fish health guidelines, and standard fish hatchery practices.

Table 2. 2001 AOP Objectives.

| | |
|--|------------------------------------|
| (3.1) Yearling Acclimation | (3.7) Out Planting |
| (3.2) Yearling Production | (3.8) Adult Trapping |
| (3.3) Rainbow Trout Rearing | (3.9) Monitor Populations / Adults |
| (3.4) Fish Health Monitoring | (3.10) Spawning |
| (3.5) Imprinting Strategies | (3.11) Alternate Brood Stocks |
| (3.6) Marking / Tagging | (3.12) Training / Contacts |
| Status: All of the 2001 AOP Objectives were completed. | |
| Note: For a full listing and description of AOP objectives 3.1 through 3.12, please refer to the 2001 SCH AOP. | |

KOKANEE SALMON PRODUCTION

Kokanee salmon production on Lake Roosevelt currently uses two stocks of kokanee. The first stock used is Lake Whatcom from the WDFW hatchery near Bellingham, Washington. Kokanee are native to Lake Whatcom and it has been the state's primary egg source since 1915. The stock is pure, having no known introductions from other kokanee sources (Crawford 1979). The second stock used is Meadow Creek from the Meadow Creek Spawning Channel at the north end of Kootenay Lake, British Columbia. Meadow Creek is one of three stocks of kokanee in Kootenay Lake and is a wild stock that reproduces naturally in the spawning channel operated by the British Columbia Ministry of Fisheries.

Table 3. 1992-2001 Kokanee salmon releases.

| Fingerlings | | Yearlings | | | | |
|---|---------------------|---------------------|----------------|---------------------|----------------|--------------------------------|
| | Raceways | Raceways | | Net Pens | | Combined Yearling Totals |
| Stock Origin | Whatcom Hatchery | Whatcom Hatchery | Meadow Wild | Whatcom Hatchery | Meadow Wild | |
| 1992 | 976,925 | 45,714 | | | | 45,714 |
| 1993 | 902,749 | 85,321 | | | | 85,321 |
| 1994 | 946,762 | 73,157 | | 53,002 | | 126,159 |
| 1995 | | 203,357 | | 72,252 | | 275,609 |
| 1996 | | 215,198 | | 71,055 | | 286,253 |
| 1997 | | 216,896 | | 48,417 | | 265,313 |
| 1998 | 87,421 | 290,028 | | 211,178 | | 501,206 |
| 1999 | | 368,622 | | 181,846 | | 550,468 |
| 2000 | | 272,166 | 105,432 | 197,975 | | 575,573 |
| 2001 | | 205,734 | 101,993 | | 485,260 | 792,987 |
| In addition to the kokanee releases SCH reared 10,000 kokanee captive broodstock during 1993. | | | | | | |

RACEWAY PRODUCTION/RELEASES

During April 2001, SCH received two stocks of kokanee salmon from the STH. Lot 09, was Lake Whatcom Hatchery stock and Lot 08, which was Meadow Creek wild stock kokanee.

LOT 09 LAKE WHATCOM BY99

In April 2001 SCH received 207,709 Lake Whatcom kokanee from the STH at 16.6 fpp totaling 12,536 pounds that were adipose clipped and either coded wire tagged or left pectoral clipped.

Releases of 205,734 kokanee at 8.02 fpp from Lot 09 totaled 25,654 pounds and were stocked into Lake Roosevelt through the SCH fish ladder on June 25, 2001.

During rearing at SCH, mortality was 1,975 or .95%. This represented a production gain of 13,118 pounds.

LOT 08 MEADOW CREEK BY99

In April 2001 SCH received 104,108 Meadow Creek kokanee from the STH at 14.8 fpp totaling 7,031 pounds that were adipose clipped and 100% coded wire tagged.

Releases of 101,993 kokanee at 8.4 fpp from Lot 08 totaled 12,187 pounds and were stocked into Lake Roosevelt through the SCH fish ladder on June 25, 2001. During rearing at SCH mortality for this lot was 2,115 or 2.03%. This represented a production gain of 5,156 pounds.

KOKANEE NET PEN PRODUCTION/RELEASES

LOT 06 MEADOW CREEK BY99

In November 2000 the net pens were loaded with 411,612 Meadow Creek kokanee at 46.9 fpp totaling 8,774 pounds located at the mouth of the Colville River.

In June 2001, 384,023 kokanee at 14.4 fpp totaling 26,607 pounds were released into Lake Roosevelt. This left a balance on hand of 3,580 fish that are being held at Kettle Falls as part of the precocity study. During rearing in the net pens mortality to date was 24,009 or 17.14%. This represented a production gain to date of 18,032 pounds. The higher than normal mortality was a result of a cold water bacteria epizootic that was treated with florfenicol at 15 mg per kg per day for 10 days.

The kokanee held through the summer for the precocity study were released on September 24, 2001 after the LRFEP examined 200 fish for signs of early maturation. These 3,020 fish at 6.28 fpp totaled 480.9 pounds of additional production after deducting mortality.

The updated production figures for Lot 06 are: 387,043 kokanee at 14.3 fpp totaling 27,087.9 pounds released into Lake Roosevelt from the Colville River net pens in 2001. Mortality was 24,369 plus 200 destroyed or 16.8%. This represented a combined production gain for Lot 06 of 18,512.9 pounds.

LOT 07 MEADOW CREEK BY99

In January 2001, 101,156 Lot 07 Meadow Creek kokanee at 38.0 fpp totaling 2,662 pounds were transferred from the STH to the net pens at Seven Bays.

In June 2001, 98,217 kokanee at 11.44 fpp totaling 8,584 pounds were released into Lake Roosevelt. During rearing in the net pens mortality for this lot was 2,939 or 2.91% and represented a production gain of 5,922 pounds.

LOT 01 LAKE WHATCOM BY00

In October 2001 the kokanee net pens 1-8 were loaded with 250,463 Lake Whatcom kokanee at 44.4 fpp totaling 5,644 pounds scheduled for release in June 2002. These pens are located at the mouth of the Colville River.

LOT 02 LAKE WHATCOM BY00

In November 2001 the kokanee net pens 13-16 were loaded with 112,658 Lake Whatcom kokanee at 42.0 fpp totaling 2,685 pounds for release in June of 2002. These pens are located at the Seven Bays net pen site.

RAINBOW TROUT PRODUCTION

Rainbow trout production on Lake Roosevelt is accomplished using net pens to rear fish large enough to counter predation and to hold them past spring draw downs to reduce entrainment through Grand Coulee Dam. We are currently using two stocks of rainbows in the program. The first stock is Spokane rainbows which historically have provided a very successful and popular sports fishery on Roosevelt. We now are testing both diploid and triploid Spokane stock rainbows to see what effect the triploids may have on creel returns and impacts on native fish in the system. The second stock we are using is the wild Phalon Lake redband trout which are from tributaries of the Kettle River, (a tributary of the Upper Columbia).

The monitoring and evaluation of the net pen program is conducted by the Lake Roosevelt Fisheries Evaluation Program, (LRFEP).

RACEWAY PRODUCTION/TRANSFERS

In 1995 SCH began an annual summer fingerling program of rearing rainbow trout in our raceways for fall net pen stocking. This frees up water and rearing space at the STH enabling them to rear additional kokanee to further our efforts on Lake Roosevelt and Banks Lake.

| Table 4. Summer raceway rearing for fall transfers. | | | |
|--|----------------------|----------------|------------------------|
| Year | Number Reared | Species | Operation |
| 1993 | 10,000 | Kokanee Brood | Captive Brood |
| 1995 | 101,116 | Rainbow Trout | Fingerling Production. |
| 1996 | 142,072 | Rainbow Trout | Fingerling Production. |
| 1997 | 140,359 | Rainbow Trout | Fingerling Production. |
| 1998 | 192,461 | Rainbow Trout | Fingerling Production. |
| 1999 | 238,139 | Rainbow Trout | Fingerling Production. |
| 2000 | 197,379 | Rainbow Trout | Fingerling Production. |
| 2001 | 249,560 | Rainbow Trout | Fingerling Production. |

LOT 15 SPOKANE BY00

In July 2001 we received 283,158 Spokane diploid rainbow trout fingerlings from the STH at 48.9 fpp totaling 5,782 pounds destined for the net pen program in October 2002.

In October and November 2001 SCH transferred 46,760 rainbow trout at 14.1 fpp totaling 3,325 pounds to the Kettle Falls net pens, 40,455 at 15.5 fpp totaling 2,610 pounds to the Hall Creek net pens, 60,065 at 13.6 fpp totaling 4,430 pounds to the Hunters net pens, 12,495 at 17.0 fpp totaling 735 pounds released at Daisy, 37,740 at 17.0 fpp totaling 2,220 pounds to the Two Rivers net pens, and 51,954 at 14.0 fpp totaling 3,396 pounds to the Seven Bays net pen site. This totaled 249,560 fish transferred to the Volunteer Net Pen Program or 16,716 pounds.

These fish had a raceway reared mortality of 14,821 or 5.2% plus an unknown loss of 18,777. This represented a production gain of 10,934 pounds. The higher than normal mortality was from a *Columnaris* bacteria outbreak one week after transfer which was treated with potassium permanganate.

NET PEN PRODUCTION/RELEASES

In cooperation with the Volunteer Net Pen Program (LRDA), SCH staff operate the six rainbow trout net pens at Kettle Falls. Starting with 2000, the Volunteer Net Pen Program reports all hatchery stock net pen rainbow releases while SCH reports the wild stock net pen releases.

The monitoring and evaluation of the net pen program is conducted by the Lake Roosevelt Fisheries Monitoring Program.

| Table 5. Wild rainbow net pen releases. | | | | | |
|--|--------------|----------------|-------------------|---------------|-------------------|
| Year | Stock | Numbers | Size / Fpp | Pounds | Brood Year |
| 1999 | PHALON LAKE | 9,725 | 2.34 | 4,155.7 | 1998 |
| 2000 | PHALON LAKE | 32,449 | 7.8 | 4,160.9 | 1999 |
| 2001 | PHALON LAKE | 58,859 | 6.7 | 8,820.5 | 2000 |

We are incorporating greater use of native or locally adaptive stocks of redband rainbow trout in our net pen program and monitoring their performance as per the recommendations of the Lake Roosevelt Fisheries Monitoring Program.

LOT 13 PHALON LAKE BY00

In October of 2000, the Colville Trout Hatchery started transfers of wild rainbow to the net pens at Kettle Falls. Total number transferred was 60,053 at an average of 47.8 fpp totaling 1,256 pounds.

In September 2001, 58,859 redband rainbow at 6.7 fpp totaling 8,820.5 pounds were released at Kettle Falls into Lake Roosevelt. 10,000 of these fish were floy tagged by LRFEP to monitor their contribution in the fishery. During rearing in the net pens mortality for this lot was 1,194 or 2.02% and represented a production gain of 7,564.5 pounds.

ADULT KOKANEE COLLECTED

These fish were collected using a combination of methods but primarily through boat electro-fishing. The fish collected were of known hatchery origin with fin clips and/or coded wire tag implants. Additional adult origin and trapping information is available through Eastern Washington University and the Lake Roosevelt Fisheries Monitoring Program.

| Table 6. 1993-2001 adult kokanee recoveries. | | | | |
|---|--------------|----------------|----------------|--------------|
| Adult Kokanee Recovered | | | | |
| Year | Males | Females | Unknown | Total |
| 1993 | | | | 60 |
| 1994 | | | | 81 |
| 1995 | | | | 10 |
| 1996 | | | | 970 |
| 1997 | 374 | 22 | | 396 |
| 1998 | | | | 2,471 |
| 1999 | 1,292 | 35 | | 1,327 |
| 2000 | 2,302 | 233 | 119 | 2,658 |
| 2001 | 1160 | 126 | 90 | 1,376 |

2001 TRAPPING

The 2001 trapping season totaled 1,376 adult kokanee collected in Sherman Creek and the adjoining cove. These fish were identified as both Lake Whatcom and Meadow Creek origin through coded wire tag analysis by the staff at EWU Fisheries Center.

The following table represents the coded wire tag analysis done at Eastern Washington University from the returning adults collected at Sherman Creek (McLellan, 2001).

| Table 7. Kootenay Stock vs. Whatcom Stock Kokanee Salmon | | | | | | | |
|---|------------|----------------------------------|--------------------|------------------------|-------------------|----------------------------|----------------|
| Returns to Sherman Creek of coded wire tagged 2-year old Meadow Creek stock (62-02-98&99) vs. Whatcom stock (62-02-62&64) released from Sherman Creek Hatchery. | | | | | | | |
| Lot Number | Age | # Stocked in L. Roosevelt | # Recovered | # Not Recovered | Recovery % | χ^2 | p-value |
| 62-02-98&99 | 2 | 101,993 | 488 | 101,505 | 0.48 | | |
| 62-02-62&64 | 2 | 113,350 | 198 | 113,152 | 0.17 | 156.02 | <0.001 |
| Note: The number stocked column has been corrected for percent coded wire tag retention. | | | | | | | |

MONITORING AND EVALUATION

Monitoring and evaluations are performed by the Lake Roosevelt Fisheries Monitoring Program. From 1988 to 1999, the principle sport fishery on Lake Roosevelt has shifted from walleye to include rainbow trout and kokanee salmon (Underwood et al. 1997, Tilson and Scholz 1997). The angler use, harvest rates for rainbow and kokanee and the economic value of the fishery has increased substantially during this 10-year period. The most recent information from the monitoring program also suggests that the hatchery and net pen rearing programs have been beneficial to enhancing the Lake Roosevelt fishery while not negatively impacting wild and native stocks within the lake.

SCH assists in the monitoring and evaluation efforts through marking coordination, data collection, database operations and stock imprinting. Information collected and compiled is being used to improve on operations at SCH and the STH. This information is available to other natural resource agencies and interested individuals.

MAINTENANCE AND CONSTRUCTION PROJECTS

Operations and maintenance were preformed according to state of Washington and WDFW policies and guidelines.

The hatchery crew was involved with a variety of projects both with fish handling and facility operations. Some projects accomplished were: net pen construction and modification, roadway and grounds maintenance, facility safety modifications, dock construction, predator netting, sewer effluent pump replacement, building repairs and maintenance, water festival and facility site improvements.

RESIDENCE REPLACEMENT

During 2000 - 2001 we replaced the on site residence with a new manufactured home. The contractor had additional finish work which was completed during 2001. The hatchery crew is still working on some of the finish work not included in the replacement contract. One of the tasks still to be done is replacing the back porch this year. The house has been great and we are very happy with the service and quality.

SEWER EFFLUENT TRANSFER STATION

The hatchery building sewer system went down this year which required replacing the effluent pumps in the pump chamber located adjacent to the support building.

STREAM MAINTENANCE

We anticipate needing to remove gravel from the fish ladder outfall on a yearly basis however 2001 was such a low water year Sherman Creek never went through a normal spring runoff. We will monitor streambed levels and preform maintenance as necessary.

KOKANEE NET PENS AND DOCKS

We have finished assembling the twenty new kokanee net pens purchased from Industrial Plastics in Washougal, Washington and we are very pleased with them. Not only are they better for the fish but they are much easier to use. The new pens cost about two and a half times more than the old style did. However, they not only last four times longer but come with walkways around four sides which make them a lot safer to operate. We located the new pens at three sites on the reservoir. Four pens at Lincoln, four at Seven Bays, and twelve at the Colville River. We currently have 17 of 20 loaded with fish to be released in June 2002. The other three will be loaded in January 2002. While we are still working out the bugs of the new system, we are very pleased with the new pens.

The net pen frame costs ran higher than the original bid amounts from 1998. Consequently, we had to save funds in two ways: (1) postponing the purchase of some support equipment, and, (2) building three of the six docks ourselves. We are 95% complete on the second dock and should have the third dock completed this February. The Colville Confederated Tribes believe they will be able to help us with our dock shortage this year through the improvements being done through the volunteer net pen program. This would help us immensely and we are very grateful for their assistance.

EQUIPMENT PURCHASES

TRUCK

We received the new truck in April of 2001. We can now park our old flatbed and use it just for snow plowing and hauling the water tank.

TRANSPORT TANK

We received the 320-gallon fry tank last spring and it is set up for small fish transport between hatcheries and the net pens.

We also equipped the tank with a fire pump for plant protection at Sherman Creek.

FEEDERS

The fish feeders have been ordered and are expected the first week of February. This should help both from a labor stand point and provide for better rearing conditions in the net pens.

FEED BARGE

The feed barge is out to bid with the Office of State Procurement and should be awarded in the next couple weeks. Since we will be running the barge less often than the runabout we installed the new motor on the 16' Searunner and will put the old outboard on the barge.

FUTURE MODIFICATIONS IDENTIFIED

- During 2002 the hatchery crew needs to finish replacing the back porch of the residence along with some minor finish work around the new house.
- Complete predator control improvements on the raceways at Sherman Creek. We will be getting the help of the Hatchery Maintenance Crew on the uprights and cable placement.
- Continue looking for ways of reducing silt and debris entering the head box through the intake screen on Sherman Creek.
- The number of fish transfers in and out of the SCH has increased from seven loads in 1992 to forty-seven 1,000 pound loads in 2001. This leads to the requested purchase of a planting tank in the 2002 budget and, ultimately, the leasing or purchasing of a truck.

COOPERATIVE PROJECTS

The hatchery staff represented WDFW and BPA on the Lake Roosevelt Water Festival Organization Committee which prepares for the annual fourth-grade event. SCH and BPA were joint presenters for the seventh year at the water festival, providing hands on instruction to more than 500 students from the surrounding area.

Visitors to Sherman Creek can now see different types of fish from the surrounding waters in a more natural environment. We constructed an 200 gallon living stream adjacent to the raceways last summer. This gives visitors a self guided type display which also ties in well during school tours. We are also replacing the hatchery dock so that visitors will have access from the Lake.

The Lake Roosevelt Hatchery Coordination Team continues to be an excellent avenue for interagency cooperation between the co-managers on Lake Roosevelt and this coming year we look forward to continued success.

Some of the agencies or groups we have partnerships with include: the Spokane Tribe of Indians, Colville Confederated Tribe, Kalispel Tribe, Colville National Forest, National Park Service, B.C. Ministry of the Environment, BC Fisheries, Lake Roosevelt Water Festival, Lake Roosevelt Development Association, Stevens County, Ferry County, Boise Cascade, Cominco, Avista, and school districts from Stevens, Ferry, Trail and Fruitvale BC, all helping and interested with the hatchery and the surrounding fish and wildlife resources.

PERSONNEL

SCH was operated during 2001 using two FTE's; Mitch Combs, Fish Hatchery Specialist 3 and Jeffrey Weathermen, Fish Hatchery Specialist 2 with administrative and complex support from Mike Lewis, Complex Manager and Cory Morrison, Fish Hatchery Specialist 4. In October Jon Lovrak replaced Cory at the Ford Hatchery and is now part of the Lake Roosevelt Team representing both Sherman Creek and Ford Hatcheries.

Fish health services for both SCH and the STH were provided by Steve Roberts, Fish Health Specialist.

During this period hatchery staff received ongoing training in the following areas: fish health, fish culture techniques, fisheries management, pesticide application, ethics, sexual harassment, boat handling, defensive driving, first aid, D.O.T. drug and alcohol testing, and safety.

In March, SCH personnel cosponsored the 27th Annual International Kokanee Workshop in Spokane along with the Spokane and Colville Tribes. This workshop is the annual inter-agency exchange of kokanee culture and management techniques between the eleven western states and Canada and was very informative and a great success.

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Appendix A

2001 Planting Report Summary

| SHERMAN CREEK HATCHERY 2001 PLANTING REPORT SUMMARY | | | | | | | | | | | PAGE 1 OF 2 |
|---|----------------|-------|-------|-----------------|--------------|--------|------|----------|----------|----------------|-------------|
| # | (Sp:Stk:BY:BO) | UNIT | DATE | WATER NAME | SITE | NUMBER | SIZE | POUNDS | CWT | MARK | LOT |
| 01 | KO:MEAD:99:W | KNP#1 | 05-27 | ROOSEVELT, LAKE | COLVILLE R. | 47,196 | 13.8 | 3,420.0 | | AD CLIPPED | 6 |
| 02 | KO:MEAD:99:W | KNP#2 | 05-27 | ROOSEVELT, LAKE | COLVILLE R. | 47,902 | 14.0 | 3,423.0 | | AD CLIPPED | 6 |
| 03 | KO:MEAD:99:W | KNP#3 | 05-27 | ROOSEVELT, LAKE | COLVILLE R. | 48,648 | 15.6 | 3,127.0 | | AD CLIPPED | 6 |
| 04 | KO:MEAD:99:W | KNP#5 | 05-27 | ROOSEVELT, LAKE | COLVILLE R. | 47,965 | 13.7 | 3,516.0 | | AD CLIPPED | 6 |
| 05 | KO:MEAD:99:W | KNP#6 | 05-27 | ROOSEVELT, LAKE | COLVILLE R. | 46,742 | 13.7 | 3,433.0 | | AD CLIPPED | 6 |
| 06 | KO:MEAD:99:W | KNP#7 | 05-27 | ROOSEVELT, LAKE | COLVILLE R. | 48,356 | 14.9 | 3,253.0 | | AD CLIPPED | 6 |
| 07 | KO:MEAD:99:W | KNP#8 | 05-27 | ROOSEVELT, LAKE | COLVILLE R. | 47,515 | 12.9 | 3,674.0 | | AD CLIPPED | 6 |
| 08 | KO:MEAD:99:W | NP#1 | 06-04 | ROOSEVELT, LAKE | SEVEN BAYS | 24,480 | 11.0 | 2,225.0 | | AD CLIPPED | 7 |
| 09 | KO:MEAD:99:W | NP#2 | 06-04 | ROOSEVELT, LAKE | SEVEN BAYS | 24,667 | 11.3 | 2,182.0 | | AD CLIPPED | 7 |
| 10 | KO:MEAD:99:W | NP#3 | 06-04 | ROOSEVELT, LAKE | SEVEN BAYS | 24,574 | 12.0 | 2,047.0 | | AD CLIPPED | 7 |
| 11 | KO:MEAD:99:W | NP#4 | 06-04 | ROOSEVELT, LAKE | SEVEN BAYS | 24,496 | 11.5 | 2,130.0 | | AD CLIPPED | 7 |
| 12 | KO:MEAD:99:W | KNP#4 | 06-25 | ROOSEVELT, LAKE | SHERMAN CR. | 49,699 | 18.0 | 2,761.0 | | AD CLIPPED | 6 |
| 13 | KO:MEAD:99:W | RW#1 | 06-25 | ROOSEVELT, LAKE | SHERMAN CR. | 62,928 | 7.6 | 8,280.0 | 62-02-98 | AD CLIPPED | 8 |
| 14 | KO:MEAD:99:W | RW#2 | 06-25 | ROOSEVELT, LAKE | SHERMAN CR. | 39,065 | 10.0 | 3,906.5 | 62-02-99 | AD CLIPPED | 8 |
| 15 | KO:MEAD:99:W | RW#1 | 06-25 | ROOSEVELT, LAKE | SHERMAN CR. | 35,251 | 7.6 | 4,638.3 | 62-03-64 | AD CLIPPED | 9 |
| 16 | KO:MEAD:99:W | RW#2 | 06-25 | ROOSEVELT, LAKE | SHERMAN CR. | 26,037 | 10.0 | 2,603.7 | 62-03-64 | AD CLIPPED | 9 |
| 17 | KO:MEAD:99:W | RW#2 | 06-25 | ROOSEVELT, LAKE | SHERMAN CR. | 52,062 | 10.0 | 5,206.2 | 62-03-62 | AD CLIPPED | 9 |
| 18 | KO:MEAD:99:W | RW#3 | 06-25 | ROOSEVELT, LAKE | SHERMAN CR. | 92,558 | 7.0 | 13,222.6 | | AD / LEFT PECT | 9 |
| 19 | KO:MEAD:99:W | KF#1 | 09-24 | ROOSEVELT, LAKE | KETTLE FALLS | 3,020 | 6.28 | 480.9 | | AD CLIPPED | 6 |
| 20 | RB:PHAL:00:W | KF#2 | 09-24 | ROOSEVELT, LAKE | KETTLE FALLS | 10,000 | 7.0 | 1,428.6 | | FLOY TAGGED | 13 |

| SHERMAN CREEK HATCHERY 2001 PLANTING REPORT SUMMARY | | | | | | | | | | | PAGE 2 OF 2 | |
|---|----------------|------|-------|-----------------|--------------|--------|------|---------|-----|------|-------------|--|
| # | (Sp:Stk:BY:BO) | UNIT | DATE | WATER NAME | SITE | NUMBER | SIZE | POUNDS | CWT | MARK | LOT | |
| 21 | RB:PHAL:00:W | KF#2 | 09-24 | ROOSEVELT, LAKE | KETTLE FALLS | 1,655 | 7.0 | 236.4 | | | 13 | |
| 22 | RB:PHAL:00:W | KF#3 | 09-24 | ROOSEVELT, LAKE | KETTLE FALLS | 12,289 | 5.0 | 2,457.8 | | | 13 | |
| 23 | RB:PHAL:00:W | KF#4 | 09-24 | ROOSEVELT, LAKE | KETTLE FALLS | 11,319 | 7.2 | 1,572.1 | | | 13 | |
| 24 | RB:PHAL:00:W | KF#5 | 09-24 | ROOSEVELT, LAKE | KETTLE FALLS | 11,734 | 8.2 | 1,431.0 | | | 13 | |
| 25 | RB:PHAL:00:W | KF#6 | 09-24 | ROOSEVELT, LAKE | KETTLE FALLS | 11,862 | 7.0 | 1,694.6 | | | 13 | |

Appendix B
Lake Roosevelt Volunteer Net Pen
2001 Planting Report Summary

| LAKE ROOSEVELT VOLUNTEER NET PEN (LRDA) 2001 PLANTING REPORT SUMMARY | | | | | | | | | | | | PAGE 1 OF 2 | |
|--|----------------|------|-------|-----------------|--------------|--------|------|---------|-----|-------------|-----|-------------|--|
| # | (Sp:Stk:BY:BO) | UNIT | DATE | WATER NAME | SITE | NUMBER | SIZE | POUNDS | CWT | MARK | LOT | | |
| 01 | RB:SPOK:99:H | NP#1 | 02-12 | ROOSEVELT, LAKE | HALL CREEK | 13,008 | 6.1 | 2,132.5 | | | | | |
| 02 | RB:SPOK:99:H | NP#2 | 02-12 | ROOSEVELT, LAKE | HALL CREEK | 13,112 | 6.8 | 1,928.2 | | | | | |
| 03 | RB:SPOK:99:H | NP#3 | 02-12 | ROOSEVELT, LAKE | HALL CREEK | 12,992 | 6.9 | 1,882.9 | | | | | |
| 04 | RB:SPOK:99:H | NP#4 | 02-12 | ROOSEVELT, LAKE | HALL CREEK | 12,890 | 6.9 | 1,868.1 | | | | | |
| 05 | RB:SPOK:99:H | NP#5 | 02-28 | ROOSEVELT, LAKE | KETTLE FALLS | 14,809 | 6.5 | 2,278.3 | | | | | |
| 06 | RB:SPOK:99:H | NP#2 | 05-23 | ROOSEVELT, LAKE | KETTLE FALLS | 19,687 | 5.5 | 3,579.5 | | FLOY TAGGED | 14 | | |
| 07 | RB:SPOK:99:H | NP#3 | 06-03 | ROOSEVELT, LAKE | KETTLE FALLS | 14,883 | 4.7 | 3,166.6 | | FLOY TAGGED | 14 | | |
| 08 | RB:SPOK:99:H | NP#6 | 06-03 | ROOSEVELT, LAKE | KETTLE FALLS | 9,781 | 4.7 | 2,081.1 | | | | | |
| 09 | RB:SPOK:99:H | NP#1 | 06-01 | ROOSEVELT, LAKE | KELLER FERRY | 17,480 | 5.0 | 3,496.0 | | | | | |
| 10 | RB:SPOK:99:H | NP#2 | 06-01 | ROOSEVELT, LAKE | KELLER FERRY | 17,460 | 6.6 | 2,645.5 | | | | | |
| 11 | RB:SPOK:99:H | NP#3 | 06-01 | ROOSEVELT, LAKE | KELLER FERRY | 16,640 | 5.8 | 2,868.9 | | | | | |
| 12 | RB:SPOK:99:H | NP#4 | 06-01 | ROOSEVELT, LAKE | KELLER FERRY | 8,000 | 3.0 | 2,666.7 | | | | | |
| 13 | RB:SPOK:99:H | NP#1 | 06-04 | ROOSEVELT, LAKE | HUNTERS | 11,820 | 3.8 | 3,110.5 | | | | | |
| 14 | RB:SPOK:99:H | NP#2 | 06-04 | ROOSEVELT, LAKE | HUNTERS | 16,601 | 7.1 | 2,338.2 | | | | | |
| 15 | RB:SPOK:99:H | NP#3 | 06-04 | ROOSEVELT, LAKE | HUNTERS | 16,559 | 7.4 | 2,237.7 | | | | | |
| 16 | RB:SPOK:99:H | NP#4 | 06-04 | ROOSEVELT, LAKE | HUNTERS | 16,467 | 6.0 | 2,744.5 | | | | | |
| 17 | RB:SPOK:99:H | NP#1 | 06-11 | ROOSEVELT, LAKE | TWO RIVERS | 14,842 | 3.5 | 4,240.6 | | | | | |
| 18 | RB:SPOK:99:H | NP#2 | 06-11 | ROOSEVELT, LAKE | TWO RIVERS | 14,947 | 5.3 | 2,820.2 | | | | | |
| 19 | RB:SPOK:99:H | NP#3 | 06-11 | ROOSEVELT, LAKE | TWO RIVERS | 14,790 | 3.7 | 3,997.3 | | | | | |
| 20 | RB:SPOK:99:H | NP#4 | 06-11 | ROOSEVELT, LAKE | TWO RIVERS | 14,882 | 3.9 | 3,815.9 | | | | | |

| LAKE ROOSEVELT VOLUNTEER NET PEN (LRDA) 2001 PLANTING REPORT SUMMARY | | | | | | | | | | | | PAGE 2 OF 2 | |
|--|----------------|-------|-------|-----------------|------------|---------|------|-----------|-----|-------------|-----|-------------|--|
| # | (Sp:Stk:BY:BO) | UNIT | DATE | WATER NAME | SITE | NUMBER | SIZE | POUNDS | CWT | MARK | LOT | | |
| 21 | RB:SPOK:99:H | NP#1 | 06-11 | ROOSEVELT, LAKE | LINCOLN | 14,962 | 4.3 | 3,479.5 | | | | | |
| 22 | RB:SPOK:99:H | NP#2 | 06-11 | ROOSEVELT, LAKE | LINCOLN | 15,088 | 4.8 | 3,143.3 | | | | | |
| 23 | RB:SPOK:99:H | NP#3 | 06-11 | ROOSEVELT, LAKE | LINCOLN | 15,786 | 5.5 | 2,870.2 | | | | | |
| 24 | RB:SPOK:99:H | NP#4 | 06-11 | ROOSEVELT, LAKE | LINCOLN | 15,043 | 4.3 | 3,498.4 | | | | | |
| 25 | RB:SPOK:99:H | NP#5 | 06-11 | ROOSEVELT, LAKE | LINCOLN | 15,001 | 4.6 | 3,261.1 | | | | | |
| 26 | RB:SPOK:99:H | NP#6 | 06-11 | ROOSEVELT, LAKE | LINCOLN | 14,694 | 4.1 | 3,583.9 | | | | | |
| 27 | RB:SPOK:99:H | NP#9 | 05-04 | ROOSEVELT, LAKE | SEVEN BAYS | 3,000 | 4.8 | 625.0 | | | | | |
| 28 | RB:SPOK:99:H | NP#9 | 05-04 | ROOSEVELT, LAKE | SEVEN BAYS | 5,000 | 4.8 | 1,041.7 | | FLOY TAGGED | | | |
| 29 | RB:SPOK:99:H | NP#1 | 06-08 | ROOSEVELT, LAKE | SEVEN BAYS | 14,918 | 5.9 | 2,528.5 | | FLOY TAGGED | | | |
| 30 | RB:SPOK:99:H | NP#2 | 06-08 | ROOSEVELT, LAKE | SEVEN BAYS | 15,032 | 4.8 | 3,131.7 | | FLOY TAGGED | | | |
| 31 | RB:SPOK:99:H | NP#3 | 06-08 | ROOSEVELT, LAKE | SEVEN BAYS | 15,014 | 4.4 | 3,412.3 | | | | | |
| 32 | RB:SPOK:99:H | NP#4 | 06-08 | ROOSEVELT, LAKE | SEVEN BAYS | 14,620 | 4.1 | 3,565.9 | | | | | |
| 33 | RB:SPOK:99:H | NP#5 | 06-08 | ROOSEVELT, LAKE | SEVEN BAYS | 14,928 | 4.3 | 3,471.6 | | | | | |
| 34 | RB:SPOK:99:H | NP#6 | 06-08 | ROOSEVELT, LAKE | SEVEN BAYS | 15,021 | 5.1 | 2,945.3 | | | | | |
| 35 | RB:SPOK:99:H | NP#7 | 06-08 | ROOSEVELT, LAKE | SEVEN BAYS | 14,992 | 4.6 | 3,259.1 | | | | | |
| 36 | RB:SPOK:99:H | NP#8 | 06-08 | ROOSEVELT, LAKE | SEVEN BAYS | 14,924 | 4.1 | 3,640.0 | | | | | |
| 37 | RB:SPOK:99:H | NP#9 | 06-22 | ROOSEVELT, LAKE | SEVEN BAYS | 4,000 | 5.0 | 800.0 | | FLOY TAGGED | | | |
| 38 | RB:SPOK:99:H | NP#9 | 06-22 | ROOSEVELT, LAKE | SEVEN BAYS | 3,000 | 5.0 | 600.0 | | FLOY TAGGED | | | |
| 39 | RB:SPOK:00:H | Truck | 10-16 | ROOSEVELT, LAKE | DAISY | 12,495 | 17.0 | 735 | | | 1 | | |
| | | TOTAL | 2001 | | | 529,168 | 5.02 | 105,491.7 | | | | | |

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